



WHYCOS INTERNATIONAL ADVISORY GROUP (WIAG)

9th WIAG MEETING GENEVA, SWITZERLAND 8-9 December 2011

FINAL REPORT

1. Opening and Introductions

1.1 The Ninth WHYCOS International Advisory Group (WIAG) meeting was opened by Mr Julius Wellens-Mensah, President of the Commission for Hydrology (and Chair of WIAG), at 9:30am on Thursday 8th December 2011. Mr Wellens-Mensah welcomed the participants to this important meeting, noting that the major objective of the meeting was to respond to the conclusions and recommendations of the 2011 Review of the WHYCOS programme.

1.2 On behalf of the Secretary-General of WMO, Mr Avinash Tyagi, Director of the Climate and Water Department, also welcomed the participants to the meeting and thanked them for giving their valuable time to the WHYCOS activities. Mr Tyagi explained the process that has been put in place to address the recommendations from the 2011 Review of the WHYCOS programme, including taking the responses from the WIAG to the next meeting of the Commission for Hydrology Advisory Working Group (12-16 December 2011) and to the 14th Session of the Commission for Hydrology in November 2012. Mr Tyagi asked the participants to give specific responses to each of the recommendations, in particular, the recommendations that are directed at the WIAG Terms of Reference and Membership. Mr Tyagi reminded the participants of the importance of the WHYCOS programme in providing access to hydrological data and products, especially in a changing climate.

1.3 Following a round of self-introductions, the Chair and participants agreed to accept the draft Agenda as the meeting Agenda (Annex I) and agreed on the working arrangements for the meeting. A list of participants is at Annex II. The WMO Secretariat outlined the documentation available for the Ninth meeting of the WIAG.

2. Consideration of the report of the Eighth meeting of WIAG.

2.1 The WMO Secretariat presented the report of the 8th session of WIAG held in February 2009. The meeting, noting that the major issues raised at the meeting (namely, sustainability of HYCOS projects, revision of the WHYCOS Guidelines) were included in the agenda for the ninth meeting, endorsed the report of the meeting.

3. Status of the individual HYCOS projects

IGAD-HYCOS

3.1 Mr Mohamed Tawfik, IGAD HYCOS Project Manager, made a brief presentation on the current status of the IGAD-HYCOS project. In the presentation he outlined the challenges facing the IGAD countries from a water resources management perspective,

including population growth, poverty, climate change, financial sustainability, lack of appropriate information, inadequate national water policies and legislative and regulatory instruments for inter-sectoral coordination, etc. However, he also highlighted the opportunities, including the existence of regional institutions (IGAD, EAC, AMCOW, etc.), regional initiatives (NBI, LVBC, ICPAC, etc.) and the donor support (EU, AWF, WB, etc.). Further he informed WIAG members about the link between IGAD In Land Water Resources Management Programme and IGAD-HYCOS project. It is noted that the project is funded by the European Union through a Contribution Agreement with WMO (No. FED/2011/266-014) signed on 15 June 2011.

3.2 The project will be implemented by WMO in two phases, preparatory phase (one year) and field implementation phase (three years) with the following main objectives:

- To promote sustainable and integrated water resources development and management in the IGAD region;
- To enhance regional cooperation for the collection, analysis, dissemination and exchange of hydrological and hydro-meteorological data and information for water related decision making.

3.3 The expected results for the IGAD-HYCOS Project preparatory phase were described in detail, with the four key delivery areas being:

- Establishment of the Project Management Unit (PMU).
- Review and updating of the IGAD-HYCOS Document.
- Engagement with stakeholders.
- Developing operational procedures.
-

HKH-HYCOS

3.4 Ms Mandira Singh Shrestha, Water Resources Specialist with the Water and Hazards section of the International Centre for Integrated Mountain Development (ICIMOD), made a presentation on the HKH-HYCOS. Ms Shrestha stated that the objective of the HKH-HYCOS is to make information travel faster than flood waters and thus support flood forecasting and early warning for flood events in the HKH region. The project is being funded through the Government of Finland.

3.5 The five major components of the HKH-HYCOS are:

- a framework for cooperation;
- a regional flood observation network;
- a regional flood information system;
- enhanced capacity and communication; and
- planning of a scaled up fully integrated regional project.

3.6 Ms Shrestha gave a detailed presentation on the observations network and the equipment and technology being employed in the HKH-HYCOS. The Overall objective of the project is to minimise loss of lives and livelihoods by reducing flood vulnerability in the HKH region with specific reference to the Ganges-Brahmaputra-Meghna and Indus river basins. The Project purpose is timely exchange of flood data and information within and among participating countries through an established and agreed platform which is accessible and user friendly.

Carib-HYCOS

3.7 Jean Pierre Bricquet, Coordinateur Caraïbe-HYCOS, IRD Centre Martinique Caraïbe, and Mr Ricardo Ramdin made a joint presentation on the Carib-HYCOS. Carib-HYCOS aims at providing support to natural disaster prevention (in particular flash floods) and water resources management. In consideration of the different hydrological conditions and national priorities (11 countries), CARIB-HYCOS is being developed in the form of two components; one covering the continental countries and the other the islands states. The project objectives are the reinforcement of national capabilities in water resources assessment and the promotion of international cooperation (exchange of data, technology and expertise). On June 2007 WMO signed an agreement with IRD for supervising the project.

3.8 The presenters described the data flow processes and procedures proposed. They described issues associated with the variability between countries in terms of databases and data management and also technical capabilities. All of the data has been collected from all of the countries and put into the one format and provided back to the countries. A website in the three languages (English, Spanish and French) has also been established. The technology supplier will be OTT Company (June 2011) and a purchase order is in process.

3.9 Two million Euro has been provided for the implementation phase of the project, with funds from both the French Government and the European Commission. The presenters raised issues with respect to the future role of IRD in future HYCOS initiatives and thus the sustainability of the Carib-HYCOS.

Mekong-HYCOS

3.10 Mr Sothea Khem, Operational Hydrologist, Information & Knowledge Management Programme, Technical Support Division, Mekong River Commission (MRC) made a presentation on the Mekong-HYCOS. The objective of Mekong-HYCOS is to establish and operate a real-time flood information system in the Mekong basin with Cambodia, Lao, Thailand and Vietnam as participating countries.

3.11 MRC collects and manages a range of data and information with its Member Countries and other regional stakeholders. The MRC Data and Information Services Portal provides a summary of MRC's services and enables direct access, including to real-time information and downloadable data. The Data and Information Services can be browsed or searched for data and technical reports that have been quality assured and registered in the MRC Master Catalogue. MRC provides real-time information services such as Water Level Monitoring and other services that involve annual updates, such the Water Quality Monitoring or Fisheries Information.

3.12 MRC has recently supported the establishment of 49 real-time HYCOS monitoring stations in the Member Countries to support flood forecasting. The real-time data are available from a dedicated website and also incorporated into MRC's water level monitoring and flood forecasting. The Mekong-HYCOS project is funded by France and will be completed in March 2012. Part of the project will now also include some discharge measurement at key sites. A workshop will be held in 2012 as part of the wrap-up for the project.

SADC-HYCOS

3.13 Mr Musariri, South African Department of Water Affairs, made a presentation on the SADC-HYCOS. The SADC-HYCOS is aimed at contributing to regional social-economic

development through the provision of management tools necessary for sustainable and cost-effective water resources development, management and environmental protection. The Southern African Development Community (SADC) is in the process of implementing the SADC-HYCOS, a project within the SADC Regional Strategic Action Plan on integrated Water Resources Management (RSAP-IWRM). The project aim is to foster greater regional co-operation in integrated water resources management. In particular, the project is aimed at enhancing hydro-meteorological monitoring, development and operation of an integrated regional water resources database and website, capacity building within the Region and the development of hydrological products.

3.14 The objectives of the SADC-HYCOS is to:

- Provide SADC with one of the necessary operational tools (information system) for the sustainable improvement of regional integrated water resources assessment, monitoring and management for a peaceful and sustainable development of the region.
- Assist the participating countries in developing their own national capacity in these fields to allow them to fully participate in and benefit from the project.
- Collaborate with other national, regional and international projects and programmes, towards the modernisation, rationalisation and improvement of the efficiency, cost-effectiveness and sustainability of the water resources and related fields information systems in the continental part of the SADC region and at the international level.

3.15 Mr Musariri reported on the status of equipment installation and database installation in the SADC-HYCOS. Access to spare parts has become an issue in maintaining the stations. Mr Musariri noted that the stations only measure water level and that rating curves need to be established at each site in order for hydrological products to be developed. Mr Musariri provided recommendations for revitalising the SADC-HYCOS Project.

Senegal-HYCOS

3.16 Mr Amadou Lamine Ndiaye, responsable du suivi du Projet SENEGAL-HYCOS Organisation with the Mise en Valeur du Fleuve Sénégal (OMVS), stated that the sustainable management of the water resources in the Senegal River basin represents a significant requirement for the four riparian countries: Guinea, Mali, Mauritania and Senegal. The river is the main watercourse of the area and represents a strategic resource under many viewpoints: it potentially represents a waterway of particular importance for fostering trade from land-locked Mali, the floodplains of its middle and lower course host important agricultural activity and also some agro-food industry, hydropower generated by the dam such as Manantali represents approximately 15% to 20% of the total needs for the riparian countries; finally the delta hosts internationally protected wetlands of exceptional ecological value for their biodiversity.

3.17 The goal of the Senegal-HYCOS project, developed by WMO with the support of expert from OMVS is to set up a basin wide information system, based on the one hand on upgrading and expanding of the observation (quality and quantity) and telecommunication network, and on the other hand on the reinforcement of the national (NHS) and regional (OMVS) capacities to exploit the data and to turn them into information likely to contribute to Integrated Water Management and sustainable development in the region.

3.18 Mr Ndiaye identified the progress to date in development of the implementation plan.

Niger-HYCOS

3.19 While there was no representative at the meeting from Niger-HYCOS, Mr Mr Frédéric Maurel, Task Team Leader, Water & Sanitation Division, Agence Française de Développement (AFD) reported on some aspects of the project. The major concerns related to the ongoing operation and maintenance of the stations. However, the database and other aspects of the data presentation seemed to be working reasonably well. The issue seems to be one of ownership of the stations in that the countries see the sites as NBA sites which should be operated and maintained by the NBA. The WMO Secretariat stressed the need for formal commitments in writing at the highest possible level to be made by the participating countries.

General Discussion

3.20 During the discussion that followed each presentation a range of issues were discussed, including:

- Interoperability of instrumentation – HMEI commented that the instrument industry was attempting to support/ensure interoperability of hydrological equipment.
- National ownership – It is essential that a handover period be established to ensure that NHSs have the capabilities to take over the operation and maintenance of sites.
- Types of data collected – the use of the HYCOS sites to collect other related data (e.g. precipitation, climate data) should always be kept under consideration.
- Data Sharing – the issue of data sharing both within HYCOS initiatives and outside the initiatives remains an issue. Data transmission protocols need to be appropriate for the capabilities of the countries.
- Knowledge Sharing Platform – lessons learned, documentation, processes, guidance, software etc., should be publically available. This could be achieved through common individual HYCOS website structures, or a central WHYCOS Programme website – perhaps including a HelpDesk. The Flagship name of the WHYCOS Programme should be upheld – needs to be included in WHYCOS Guidelines.
- Security of equipment – vandalism remains an issue in many HYCOS Projects.
- Use of most appropriate technology – most HYCOS initiatives were now looking more closely at the technology employed and making it fit for purpose and capable of being sustained.
- Capacity building at country levels remains a major requirement of HYCOS initiatives.
- In order to ensure ownership of a project, the project document shall be formally adopted by all member countries before the start of the implementation.
- The various HYCOS components are invited to share, through the whycos.org web site, all the available information that may be beneficial in the implementation of other projects (training material, network design documents and procedures, contract templates, etc.).
- A specific MoU shall be signed between the participating countries and executing agency (as addendum to more general regional cooperation framework if applicable) detailing countries' role, responsibilities and commitments (financial, human resources, custom clearance, etc). This MoU shall be signed at the highest possible political level in order to ensure its enforcement. WMO and

donors shall be more proactive in promoting this MoU. This could also address issues such as customs clearance.

- Members of project steering committees should be high ranked officials with executive power.
- The development of any further project phase shall be preceded by a careful analysis of the lessons learnt during the preceding one and by the adoption of the necessary remedial action in the future activities.

3.21 Using the information contained in the presentations, the participants updated the table on the current status of the HYCOS projects (Annex III).

4. Instrumentation, installation, operations and maintenance issues

4.1 This topic was addressed through the discussions held under Agenda Items 3 and 8 of the meeting.

5. Hydrological information systems and data base management issues

5.1 This topic was addressed through the discussions held under Agenda Items 3 and 8 of the meeting.

6. Hydrological data and products issues

6.1 This topic was addressed through the discussions held under Agenda Items 3 and 8 of the meeting.

7. Lessons learnt and outreach to ensure sustainability of HYCOS projects

7.1 The WIAG examined the draft paper on sustainability and made the following suggestions:

- In paragraph 5.1 – signed at the highest appropriate level...
- In paragraph 5.1 include the requirement for a formal financial commitment to support the sustainability of the activities.
- An additional point to support the integration of the HYCOS initiatives into the other/existing national data collection systems.
- It must be remembered that the HYCOS projects are usually targeted at the least developed and developing countries that in many instances are not capable of financing the maintenance of their existing networks.
- It was noted that in some instances it has been through involvement in the project that the commitment has developed, including, in some cases, the installation of additional stations.
- The availability of spare parts as an inhibiting factor to sustainability was also raised. The procurement process could be used to address the availability of spare parts. The history of the suppliers was also seen as important in this regard. The encouragement of local production was also identified as a possible solution.
- The need to align the products of the projects within the national priorities for water projects is seen as essential to sustainability.
- Communication at the national level, between stakeholders is essential to avoid overlap and duplication and thus make more effective use of resources.
- The capacity building section needs to be expanded to include institutional capacity building – Quality Management.
- Harmonisation of other water activities within the HYCOS components.

- Communication and community awareness strategies need to have sustainability as one of their focus areas.

7.2 The WIAG participants requested that a section on sustainability be included in the WHYCOS Guidelines and this material and the comments made be used as the basis for this section of the Guidelines. WIAG participants will provide some additional comments during the review of the Guidelines.

8. 2011 Review of WHYCOS – response to recommendations

8.1 Mr Paul Pilon, one of the Lead Reviewers of the WHYCOS Review, made a presentation on the 2011 Review of the WHYCOS programme. Mr Pilon stated that the review had concluded:

- Concept of WHYCOS remains valid
- Growing awareness of the need for data and products to combat the effects of natural hazards such as floods and droughts
- WHYCOS can contribute to sustainable development
- Allows strengthening of the capacity of NHSs
- Effective mechanism to bring donors and recipients together for the common good
- The two prongs of WHYCOS
 - Strengthen regional institutions and NHSs' abilities to collect and share hydrological data
 - Strengthen capacity to develop value-added products and services
- Symbiotic relation between collection of data and their use that allows benefits to society to accrue
- Most efforts to date have been directed almost entirely to the first prong... and for a variety of reasons...
- Sustainability of investment is in jeopardy of being lost or reduced quickly over time
- Structural problems of WHYCOS
- Persistent systemic problems from HYCOS project to HYCOS project and within the WHYCOS programme
- "Lack of a capacity building and broadening its definition"
- There has been an inability to take advantage of opportunities that broaden the utility of the WHYCOS programme into the domain of outcomes through value-added products.
- Detailed project documents identify a number of objectives to be undertaken that require value-added products and services.

8.2 Mr Pilon then went through the recommendations of the review team (Annex IV).

8.3 The participants discussed the conclusions and recommendations of the 2011 Review of the WHYCOS Programme and formulated responses to the recommendations for the Chair to take to the WMO Commission for Hydrology Advisory Working Group (Annex IV).

9. WIAG Terms of Reference and Membership

9.1 The WIAG participants reviewed their Terms of Reference and Membership of WIAG and proposed some changes in line with the recommendations of the 2011 Review of the WHYCOS Programme. In this regard they decided:

- To propose that ToR 1, be changed to: Consider and advise the WMO on the..

- To propose that ToR 3, be changed to: ...avoidance of overlap and duplication, and ..
- To propose that ToR 5, be change to: ...marketing and dissemination of achievements of WHYCOS.
- To propose an additional ToR 6 which splits ToR 5 into two: ToR 6: Consider and propose ways and means of engaging with Donors in all project stages, especially for the future sustainability and appropriate expansion of WHYCOS.
- Under composition 3. Change to ... active technical/financial partner.
- Under composition it was proposed to remove “informants”.
- Under composition - other persons – Representatives of prospective technical/financial partners and .. other international programmes ...
- Under composition – Director – Hydrology and Water Resources Branch of WMO
- WIAG asked the WMO Secretariat to fix up the diagram accordingly.
- To recommend to WMO that the WIAG meetings be held on at least an annual basis – subject to the availability of funds.
- To request the WMO Secretariat to compile a draft mode of operation for WIAG for consideration out of session. This would include the possibility of small committee groups on specific topics.

9.2 The complete text of the recommended revised ToR is attached as Annex V

10. Cooperation between WMO and WHYCOS partners

10.1 The WIAG participants stressed the importance of financial partners being involved in WIAG meetings and requested that the WMO make greater efforts to ensure their involvement in future meetings, both active and prospective.

11. Future Steps

11.1 The Chair outlined the process of taking forward the outcomes of this meeting to the CHy Advisory Working Group, the Commission for Hydrology and the WMO Executive Council.

12. Any other business

12.1 WIAG participants encouraged the WMO Secretariat to organise the next meeting of the WIAG in a timely manner and to seek to finalise comments on and response to the recommendations from the 2011 WHYCOS Review as soon as practically possible.

13. Closure

13.1 The WIAG meeting was closed at 5:00pm on Friday 9th December 2011. Mr Wellens-Mensah thanked the participants for their contributions to the meeting and asked the Secretariat to distribute the report of the meeting for final comments as soon as possible.

AGENDA

9th WIAG MEETING
GENEVA, SWITZERLAND
8-9 December 2011

1. Opening and Introductions
2. Consideration of the report of the eighth meeting of WIAG
 - Review of report on WIAG 8
3. Status of the individual HYCOS projects
 - Presentations on status of individual HYCOS components
4. Instrumentation, installation, operations and maintenance issues
5. Hydrological information systems and data base management issues
 - Presentation on "DCP and satellite data transmission – practical issues for HYCOS project"
 - Presentation on other data transmission modes used in HYCOS, if any.
6. Hydrological data and products issues
7. Lessons learnt and outreach to ensure sustainability of HYCOS projects
 - Sustainability paper compiled after WIAG 8.
8. 2011 Review of WHYCOS – response to recommendations
 - Discussion on Review findings and recommendations.
9. WIAG Terms of Reference and Membership
10. Cooperation between WMO and WHYCOS partners
11. Future Steps
12. Any other business

**9TH SESSION WHYCOS INTERNATIONAL ADVISORY GROUP (WIAG)
GENEVA, SWITZERLAND, 8-9 DECEMBER 2011**

LIST OF PARTICIPANTS

BOTSWANA (SADC)	
Mr Alfred Obonetse MASEDI Water and Sanitation Expert SADC Secretariat SADC House Private Bag 0095 Gaborone	Tel: +267 395 1863 Fax: +267 397 2848 Email: omasedi@sadc.int
BRAZIL	
Dr Antônio CARDOSO NETO Expert in Water Resources National Water Agency of Brazil Agência Nacional de Aguas SPO, Area 5, Cuadra 3, Bloco L 70610-200 Brasilia DF	Tel: (5561) 21 09 5561 Cell: (5561) 99 83 39 89 Fax: (5561) 21 09 5265 Email: cardoso.neto@ana.gov.br
CAMBODIA (Mekong)	
Dr Sothea KHEM Mekong River Commission (MRC) Office Secretariat in Phnom Penh 576 National Road #2, Chak Angre Krom, Mean Chey P.O. Box 623 Phnom Penh	Tel: +855-23 425 353 Ext. 3063 Cell: +855-15 594 484 Fax: +855 23 425 363 Email: khem@mrcmekong.org Web: www.mrcmekong.org
CANADA	
Mr Paul PILON International Joint Commission 234 Laurier Avenue West, 22 nd Floor, Ottawa, ON K1P 6K6	Tel: +613 995 0194 Cell: Fax: Email: pilonp@ottawa.ijc.org
CUBA	
Dr Eduardo Orlando PLANOS GUTIERREZ Instituto de Meteorologia Calle I No. 64, Apto 2C, Vedado La Habana Cuba	Tel: (53-7) 86 86 672 Fax: (53-7) 86 68 010 Email: eduardo.planos@insmet.cu
FINLAND	
Mr Markku PUUPPONEN Leading Hydrologist Finnish Environment Institute Hydrological Service Mechelininkatu 34a P.O. Box 140 FI-00251 Helsinki	Cell: +358 40 743 2184 Fax: +358 20 490 2590 Email: markku.puupponen@ymparisto.fi www.environment.fi/syke
FRANCE	
Mr Frédéric MAUREL Task Team Leader, Water &	Tel : +33 1 53 44 40 24 Email : maurelf@afd.fr

Sanitation Division Chef de Projet, Division Eau & Assinissement Agence Française de Développement (AFD) 5, Rur Roland Barthes 75598 Paris Cédex 12	
Mr Daniel JOUVE Compagnie Nationale du Rhône Direction de l'Ingénierie Responsable du Département Gestion des Systèmes Fluviaux et des Aléas Climatiques 2, Rue A. Bonin 69316 Lyon Cedex 04	Tel : +33 4 72 00 68 16 Fax : +33 4 72 10 66 72 Email : d.jouve@cnr.tm.fr
GERMANY	
Mr Ulrich LOOSER Head, Global Runoff Data Centre (GRDC) In the Federal Institute of Hydrology (BfG) Am Mainzer Tor 1 56068 Koblenz	Tel: +49 261 1306 5224 Fax: +49 261 1306 5722 Email: looser@bafg.de or grdc@bafg.de Web: http://grdc.bafg.de
GHANA	
Mr Julius WELLENS-MENSAH Director Hydrology Hydrological Services Department Ministry of Water Resources, Works and Housing P.O. Box MB 43 Accra	Tel: +233 302 666 098 Fax: (233 21) 67 73 84 Email: jwellens_mensah@hotmail.com
INDONESIA	
Dr Arie Setiadi MOERWANTO Research Center for Water Resources RIWR Jl. Ir. H. Juanda No. 193 Bandung 40135	Tel: +62 22 250 1083 Fax: +62 22 250 0163 Email: setiadi@melsa.net.id or ariemoerwanto@yahoo.com
Dr William Marcus PUTUHENA Research Center for Water Resources Head of Experimental Station for Hydrology and Water Management Jl. Ir. H. Juanda No. 193 Bandung 40135	Tel: +62 22 250 1083 Fax: +62 22 250 0163 Email: wiliam-putuhena@yahoo.com
NEPAL (HKH)	
Dr Mandira Singh SHRESTHA Water Resources specialist Water and Hazards International Centre for Integrated Mountain Development (ICIMOD) GPO Box 3226 Kathmandu	Tel: +977 1 500 3222 Ext 258 Fax: +977 1 500 3277 Email: mshrestha@icimod.org
SENEGAL	
Mr Amadou Lamine NDIAYE Chef du Projet SENEGAL-HYCOS	Tel : +221 77 537 00 00 Fax : +221 33 869 01 63

Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS) Rocade Fann, Bel Air Cerf Volant B.P. 3152 Dakar	Email : amadnd@yahoo.fr
SOUTH AFRICA (SADC)	
Mr Musariri Musariri Deputy Director Hydrological Services Department of Water Affairs Pretoria	Tel: +27 12 336 7949 Cell: +27 78 632 9501 Fax: +27 12 326 1488 Email: musaririM@dwa.gov.za
Dr Dlamini Tnobekile (Mrs) Cntl Engineering Technician Hydrological Services Department of Water Affairs Pretoria	Tel: +27 12 336 7889 Fax: +27 12 326 1488 Email: dlaminit5@dwa.gov.za
TRINIDAD & TOBAGO	
Mr Ricardo RAMDIN Water Resources Agency Water and Sewerage Authority Farm Road St Joseph Trinidad and Tobago	Tel: 1 868 662 2302/4 Cell: 1 868 473 7089 Email: ramd8681@wasa.gov.tt
TUNISIA	
Mr Hassen Lotfi FRIGUI Directeur des Eaux de Surface Direction Générale des Ressources en Eau Ministère de l'Agriculture et de l'Environnement 43 Rue de la Manoubia Montfleury 1008 Tunis Tunisia	Tel : + 216 98 623 632 Fax : + 216 71 780 391 Email : hfrigui@yahoo.fr
HMEI	
Mr Bruce SUMNER Executive Secretary Association of Hydro Meteorological Equipment Industry (HMEI) c/o WMO (Room 7J68) 7 Bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland	Tel : +41 22 730 8004 Fax : +41 22 730 8340 Email : hmei@wmo.int
IGAD HYCOS	
Mr Mohamed Mahmoud TAWFIK Project Manager IGAD-HYCOS Project WMO/IGAD/ICPAC Dagoretti Corner, Ngong Road P.O. Box 1395 00606 Nairobi Kenya	Tel:+254-20 3877 371 Cell: +254 (0) 705 685 914 Fax:+254-20 3877 373 Email: mtawfik@wmo.int mtawfik6446@hotmail.com
IRD	
Mr Jean Pierre BRICQUET	Tel : +596 596 59 17 18

<p>Coordinateur Caraïbe-HYCOS IRD Centre Martinique Caraïbe B.P. 8006 97259 Fort de France Martinique</p>	<p>Fax : + 596 596 62 45 83 GSM : +596 696 17 82 36 Email : jean-pierre.bricquet@ird.fr</p>
WMO SECRETARIAT	
<p>Mr Avinash TYAGI Director Water and Climate Department World Meteorological Organization 7 bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland</p>	<p>Tel: +41 22 730 8355 Fax: +41 22 730 80 43 Email: atyagi@wmo.int</p>
<p>Mr Bruce STEWART Chief, Basic Systems in Hydrology Water and Climate Department World Meteorological Organization 7 bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland</p>	<p>Tel: +41 22 730 83 30 Fax: +41 22 730 80 43 Email: bstewart@wmo.int</p>
<p>Mr Wolfgang GRABS Chief, Hydrology and Water Resources Branch Climate and Water Department World Meteorological Organization 7 bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland</p>	<p>Tel: +41 22 730 83 58 Fax: +41 22 730 80 43 Email: wgrabs@wmo.int</p>
<p>Mr Tommaso ABRATE Scientific Officer Basic Systems in Hydrology Water and Climate Department World Meteorological Organization 7 bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland</p>	<p>Tel: +41 22 730 83 38 Fax: +41 22 730 80 43 Email: tabrate@wmo.int</p>
<p>Mr Datius RUTASHOBYA Scientific Officer Basic Systems in Hydrology Water and Climate Department World Meteorological Organization 7 bis Avenue de la Paix C.P. 2300 1211 Geneva 2 Switzerland</p>	<p>Tel: +41 22 730 83 39 Fax: +41 22 730 80 43 Email: drutashobya@wmo.int</p>

CURRENT STATUS OF HYCOS INITIATIVES

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
Implemented Projects (Category 1¹)				
MED-HYCOS	Albania, Algeria, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Greece, Italy, Jordan, Lebanon, Malta, Morocco, Romania, Serbia and Montenegro, Slovenia, Spain, The former Yugoslav Republic of Macedonia, Tunisia, Turkey (20 countries)	Donor: World Bank Grant: US\$ 1,700,000 Pilot Regional Centre (PRC): Institut de Recherche pour le Développement - IRD (France) Executing Agency: WMO	Enhanced cooperation among participating countries Establishment of a network of 31 DCPs Development of a Mediterranean hydrological Information system accessible via the Web Training for the staff of the participating NHSs	Implementation: 1997-2001
SADC-HYCOS (phase I)	Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa,	Donor: European Commission Grant: US\$ 2,400,000 PRC: Department of Water Affairs and	Installation of a network of 43 DCPs, Development of an Internet based Hydrological Information System	Implementation: 1998-2001 Funded by the European Commission

¹ Category 1 - Implemented projects (external funding ended)

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	Swaziland, United Republic of Tanzania, Zambia, Zimbabwe (11 countries)	Forestry - DWAF (South Africa) Supervising Agency: WMO	Training for the staff of participating NHSs Enhanced cooperation among participating countries	
SADC-HYCOS (phase II)	Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia, Zimbabwe (13 countries)	Donor: European Commission (PRC support), The Netherlands (Project support) Grant. € 4,500,000 PRC: Department of Water Affairs and Forestry - DWAF (South Africa) Supervising Agency: WMO	Consolidation/redesign of the regional observation network. <installation of an additional 42 DCPs, plus 7 Phase 1 DCPs – Total 92 DCPs Development of the sub-regional and national water resources information systems, Development of hydrological products of regional interest, Training and awareness building.	Implementation: 2005-2009. Jointly funded by EU and The Netherlands Government.
AOC-HYCOS (pilot phase)	Burkina Faso, Cape Verde, Chad, Gambia, Ghana, Guinea, Mali, Mauritania, Niger, Nigeria, Senegal (11 countries)	Donor: France Grant: FF 2,000,000 PRC: AGRHYMET and Niger Basin Authority - NBA (Niger) Executing Agency: WMO role:	Consolidation of the development of the Regional Hydrological Observatory of Western and Central Africa Support to the data collection activities of participating countries Enhanced cooperation among participating countries.	Implementation: 1999-2002
Volta-HYCOS	Bénin, Burkina Faso, Côte d'Ivoire, Ghana,	Donor: France	Developing a regional infrastructure for data collection, management and	Implementation: 2005-2009

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	Mali, Togo (6 countries)	Grant: € 1,000,000 PRC: Ecole Inter-Etat d'Ingénieurs de l'Équipement Rural – EIER (Burkina Faso) Executing Agency: WMO	exchange (16 DCPs). Support the development of a regional cooperation framework Enhanced cooperation among participating countries	
Niger-HYCOS Phase I	Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria (9 countries)	Donor: France Grant: 3,000,000 PRC: Niger Basin Authority - NBA (Niger) Supervising Agency: WMO	Reinforcing national data observation and collection capacity (49 DCPs) Developing national hydrological information systems Establishing a regional information system Training Enhanced cooperation among participating countries	Implementation: 2005-2010
Pacific-HYCOS Phase I	Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Marshall Islands, Solomon Islands, Tonga, Tuvalu, Vanuatu (14 countries)	Donors: European Union Grant: € 2.525M SOPAC in-kind: € 1.0M PMU and PRC: SOPAC	Establishment of national capacity in water resources assessment. Establishment of basic hydrological monitoring and data capture systems Establishment of hydrological databases and information systems	Implementation: 2006-2010

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
Projects under Implementation (Category 2²)				
Carib-HYCOS (CIC)	Barbados, Cuba, Dominican Republic, France (Guadeloupe and Martinique), Haiti, Jamaica, Trinidad and Tobago, Antigua, Dominica, St Lucia (11 countries)	Donor: France and EU Estimated budget: € 2,000,000 PRC: IRD in Martinique Supervising Agency: WMO	Modernization and strengthening of national activities in WRM Establishment of a network of about 40 – 50 DCPs Promotion of international cooperation among small island states Promotion of the exchange of information, technology and experience Installation of the data base software and training for installation and maintenance	Partial funding contributed by donor, for project preparatory phase (completed in 2008). Project document published. Implementation: 3 years (starting 2009) Project still under way – current expected completion date June 2012. Six months extension requested to main donor.
HKH-HYCOS	Bangladesh, Bhutan, China, India, Nepal, Pakistan (6 countries)	Donor: Finland Budget: 2 million EURO Technical and Supervising Agency: WMO Implementing Agency: (ICIMOD)	Establishment of a regional network of 28 DCPs in 4 countries Establishment of a regional Flood Information System; Provision of near real-time meteorological and hydrological information (especially flood forecasting). Enhanced cooperation among participating countries and strengthening of national	Project under implementation 2009 until 2012

² Category 2 - Projects under implementation (field implementation started or funds already committed by donor(s))

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
			capacities.	
IGAD-HYCOS	Djibouti, Eritrea, Ethiopia, Kenya, Sudan, South Sudan, Uganda, Burundi, Rwanda, Somalia (10 countries)	Donor: European Commission Grant € 4,800,000 Preparatory Phase: € 923,000 Implementing Agency: WMO	Establishment of a regional network of 100 DCP's Creation of a regional information system Promotion of national capacity in water management Enhanced cooperation among participating countries Support IGAD Inland Water Resources Management Programme (INWRMP)	Preparatory Phase: 2011-2012 Implementation Phase: 2012-2015
Mekong-HYCOS	Lao PDR, Thailand, Cambodia, Viet Nam (4 countries)	Donor: AFD, France. Budget: 3 million EURO Supervising Agency: WMO Implementing Agency: MRC	Establishment of a real time data collection and transmission system based on a network of 49 hydro-met stations Strengthening of the capability of NHSs to provide timely and accurate monitoring and forecasting services Enhancement of regional cooperation;	Project under final stages of implementation. Duration has been 5 years, extended into March 2012.
Niger-HYCOS Phase II	Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria (9)	Donor: France Grant: 2 017 193 € PRC: Niger Basin Authority - NBA	Part of GIRE 2 project First Steering Committee meeting September 2011	Implementation: 2010-14

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	countries)	(Niger) Supervising Agency: WMO		
Senegal-HYCOS	Mali, Mauritania, Senegal, Guinea (4 countries)	Donor: France, Grant 170 000 € Implementing agency: OMVS Supervising Agency WMO	Preliminary phase Kick off meeting September 2011 Project document by March 2012	Implementation: 2011-12
Projects in Advanced Development Stage (Category 3³)				
SADC-HYCOS (phase III)	Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia, Zimbabwe (13 countries)	Donor: The Netherlands Government had expressed initial support. PRC: Department of Water Affairs and Forestry - DWAF (South Africa) Supervising Agency: WMO	Consolidation/redesign of the regional observation network, Improvements to the sub-regional and national water resources information systems – focus on rating curves, Continues development of hydrological products of regional interest, Training and awareness building.	Implementation was to be 2010-2014, but now on hold.
Congo-HYCOS	Cameroon, Central African Republic,	Donors: EU (598 488 €), AFDB		OIEau grant request to EU approved after a preliminary

³ Category 3 - Advanced development stage (detailed project document available or partial funding already committed by donor(s))

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	Congo, Democratic Republic of the Congo	Implementing agency: CICOS Partners OIEau		screening. Some activities complementary to Congo-HYCOS proposal
Projects in Preparatory Stage (Category 4⁴)				
Baltic-HYCOS (frozen)	Belarus, Czech Republic, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russian federation, Slovakia, Sweden, Ukraine (12 countries)	Estimated budget: €2,360,000 Executing Agency: WMO (proposed)	To establish a system to acquire, manage and disseminate water resources and water-related environmental data and information (40 DCPs). To foster the adoption of standardized practices of data and information management and dissemination. To enable the international exchange of water-related data and information To enhance cooperation among participating countries	Project proposal available, submitted for funding to the European Commission (FP5) but not retained Period of implementation is expected to be 3 years
Pacific-HYCOS phase II	Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Marshall Islands, Solomon	Under development	Under development, but continuation of phase I.	Limited interest from Donors. Stronger national commitment required.

⁴ Category 4 - Preparatory stage (project proposal available, funded by participating countries and/or WMO)

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	Islands, Tonga, Tuvalu, Vanuatu (14 countries)			
Projects in Conceptual Stage (Category 5⁵)				
Nile-HYCOS	Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, United Republic of Tanzania, Uganda (10 countries)	Estimated budget: US\$ 2,500,000 Executing Agency: WMO (proposed)	Improvement of data collection, management, storage and exchange Reinforcing hydrological forecasting (floods and droughts) and water management Promoting integration of hydrological data with socio-economic and environmental data Enhancing cooperation among participating countries	Countries committed Project brief prepared, suspended during institutional reform process of regional institution Period of implementation is expected to be 2 years
Amazon-HYCOS	Bolivia, Brazil, Colombia, Ecuador, Peru, Venezuela (6 countries)		Promoting the knowledge about hydrological processes through the use of new technologies and reinforced human resources. Stimulating the cooperation between hydrological services through the establishment of a information network and	Project brief prepared, waiting for countries' commitment. In May 2012, there will be a meeting in Manaus, Brazil as a "trigger" for this project. RAIH Hydrological Advisors will be invited to the discuss the

⁵ Category 5 - Conceptual stage (country commitment received and project brief prepared, funded by participating countries and/or WMO)

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
			<p>of a regional center</p> <p>Enhancing cooperation among participating countries</p>	proposal.
Aral-HYCOS	Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan (5 countries)	Estimated budget: € 4,000,000	<p>Developing a hydrological information system for the Aral Sea basin;</p> <p>Providing assistance to the participating countries in capacity building</p> <p>Enhancing collaboration with other projects and programmes in addressing environmental issues</p> <p>Enhancing cooperation among participating countries</p>	<p>Countries committed, project brief prepared, funding being negotiated with the Swiss Agency for Development and Cooperation (SDC)</p> <p>Period of implementation is expected to be 2 years</p>
Arctic-HYCOS	Canada, Iceland, Norway, Russian Federation, USA (5 countries), in cooperation with international scientific programmes	Estimated budget: US \$ 1,230,000	<p>Establishment of a basic network of hydrological stations in the Arctic drainage basin</p> <p>Establishment of a regional data bank for real time and historical data and uniformization of data practices.</p> <p>Harmonization and integration with other relevant international observation networks (GCOS, GTOS, GOOS, AMAP, etc.).</p> <p>Enhancing cooperation among participating countries</p>	<p>Countries committed</p> <p>Project brief prepared</p> <p>Part of WMO contribution to the International Polar Year (2007-2008).</p> <p>Period of implementation is expected to be 2 years</p>

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
Black Sea-HYCOS (frozen)	Bulgaria, Georgia, Republic of Moldova, Romania, Russian Federation, Turkey, Ukraine (7 countries)	N.A.	<p>Achieving better understanding of regional hydrometeorological processes and environmental trends</p> <p>Promoting the exchange of standardized and consistent data;</p> <p>Providing transboundary co-operation especially in dealing with extreme events and in capacity building</p> <p>Enhancing cooperation among participating countries</p>	<p>Countries committed</p> <p>Project brief prepared</p> <p>No further development due to lack of funding</p>
Danube-HYCOS (frozen)	Austria, Bosnia Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Serbia and Montenegro, Slovakia, Slovenia, Republic of Moldova, Romania, Ukraine (13 countries)	Estimated budget: US\$ 2,150,000	<p>Improved observing networks and data management facilities</p> <p>Improved data accessibility, exchange and dissemination;</p> <p>Improved forecast reliability and timeliness, and delivery of hydrological information products to support the Danube conventions.</p> <p>Enhancing cooperation among participating countries</p>	<p>Countries committed</p> <p>Project brief prepared</p> <p>No further development due to lack of funding</p> <p>Period of implementation is expected to be 4 years</p>
La Plata-HYCOS	Argentina, Bolivia, Brazil, Paraguay,	Supervising Agency: WMO (proposed)	Promoting the knowledge about hydrological processes through the use of	Project brief prepared, waiting for countries commitment.

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
	Uruguay (5 countries)		<p>new technologies and reinforced human resources.</p> <p>Stimulating cooperation between hydrological services through establishment of an information network and a regional centre.</p>	In May 2012, there will be a meeting in Manaus, Brazil as a “trigger” for this project. RAIH Hydrological Advisors will be invited to discuss the proposal.
Projects under consideration (Category 6⁶)				
Lake Chad-HYCOS	Cameroon, Central African Republic, Chad, Niger, Nigeria (5 countries)	N.A.	N.A.	<p>Project proposal prepared.</p> <p>Country request received.</p> <p>WMO assisting Lake Chad Basin Commission to identify donor(s) to provide financial support for the project</p>
South East Asia HYCOS (SEA)	Indonesia, Malaysia, Philippines (3 Countries) other southeast Asian countries as interested (10).		<p>The focus especially on the effect of climate change in the water sector:</p> <ul style="list-style-type: none"> • Promoting international cooperation amongst participating countries • Promoting exchange of information, technology and experience • Establishment of a regional database fro 	<p>Awaiting commitment from countries before development of project proposal.</p> <p>SEA HYCOS expects participation from up to 10 South East Asian Countries</p>

⁶ Category 6 - Countries requested WMO support for project development

Project	Status			
	Participating Countries	Funding and management	Achievements or Expected Outputs	Remarks
			real time and historical data.	

WIAG RESPONSE TO RECOMMENDATIONS

Recommendation 1

The concept of WHYCOS needs to further evolve to make operational, within its HYCOS components, institutional, organizational, and human resources capacity development to allow the attainment of sustainable outcomes and societal impacts.

Response:

WIAG participants agreed with the recommendation.

Comments:

WIAG supported the objectives of the recommendation, but noted that any evolution/expansion should be adequately resourced (both in terms of funding and the length of the project) and not draw resources away from existing activities and initiatives. It further noted that a change in terminology may be required to re-enforce this expansion, e.g. "WHYCOS for Water Resources Management" and individual "HYCOS Programmes or Components". It further noted that such an expansion may require an evaluation of existing institutional framework and mandate and the involvement of additional partners from the national water sector in project development and thus needed to be included in the stakeholder engagement during preparatory and implementation phases.

Recommendation 2

The concept of WHYCOS and its HYCOS components be designed to give adequate attention to achieving outcomes, such as the provision of water resources assessments and flood forecasts and warnings, and not solely outputs such as the acquisition and distribution of hydrological data.

Response:

WIAG participants agreed with the recommendation.

Comments:

In addition to the comments related to Recommendation 1, WIAG agreed that a clear definition of what has been achieved for the countries through the HYCOS Component should be made available and accessible.

Recommendation 3

Agreements with each country should be signed at the highest levels clearly defining the financial and human resource commitments of the country towards the project implementation and post-project stages of the component. Such an agreement should be made before commencement of the field implementation stage to ensure participation of the country and long-term sustainability of the investment. If such an agreement cannot be satisfactorily concluded, then the implementation stage should not go forward.

Response:

WIAG participants had mixed views with respect to this Recommendation

Comments:

While WIAG members agreed with the intent of the recommendation (the commitment of the countries involved to its long-term sustainability), they noted that the implementation of this

recommendation may differ from one project to another. Some WIAG members expressed concerns with respect to the signing of documents at the highest appropriate level, in particular, where there were existing agreements, e.g. treaties and protocols. Other WIAG members strongly supported the recommendation, noting that the “highest levels” needed to be identified and appropriate and that the agreement needed to be between the countries and WMO to enable sustainability of the project outputs and outcomes. WIAG members agreed that in some instances a tri-partite agreement could be considered (e.g. WMO, Regional Institution and the Countries). Some WIAG members also expressed concern with the impact of the last part of the recommendation on the overall involvement of all countries.

Recommendation 4

All project stages, namely the Project initiation stages, the Project implementation stages and the Post-project stage, should maximise, to the practicable extent possible, the engagement of NHSs' personnel in the development and implementation of all activities.

Response:

WIAG participants agreed with this recommendation

Comments:

WIAG noted that this recommendation could be stronger and that it was important that a common group of NHS staff be involved at all stages of the project development and implementation. It was also noted that the NMS staff should also be included where appropriate.

Recommendation 5

WMO needs to redefine and reinvigorate its leadership role of the WHYCOS programme and its HYCOS components. WMO should be taking a much more proactive role in providing oversight and technical assistance by increasing its ability to provide advice and guidance on the operational implementation of on-the-ground projects such as HYCOS components.

Response:

WIAG participants agreed with this Recommendation

Comments:

WIAG members stated that the roles and responsibilities of WMO as a supervising agency or implementing agency need to be clearly defined in the WMO Guidelines. WIAG members also noted that the NMSs role also needed to be re-enforced. WIAG members also noted that the roles and responsibilities of the other agencies involved need to be clearly defined as well and it was noted that the WHYCOS Guidelines should (and do to some extent) address this.

Recommendation 6

WMO needs to create a WHYCOS Office dedicated to the total management of the WHYCOS programme and its HYCOS components thereby focusing Secretariat leadership, having the delegated authority to respond to operational requirements in a timely fashion, and to take advantage of opportunities as they arise. The Office needs to promote awareness of the programme, facilitate donor involvement, and focus on the operational delivery of the programme. The Office may also include a Help Desk on the programme to assist in this process, particularly the provision of technical assistance to NHSs in implementing the components, particularly during the Post-project stage.

Response:

WIAG participants strongly agreed with this Recommendation

Comments:

WIAG members emphasized that the Office, should it be established, should be within the HWRP of WMO. WIAG stressed the need for a speedy approach to this recommendation. WIAG also noted that implementation of this recommendation will require re-allocation of staff time in the Secretariat and possibly staff recruitment.

Recommendation 7

WMO may need to invest in acquiring and developing its staff to be subject-content experts so they can more effectively provide advice and undertake analyses associated with operational aspects of HYCOS components and the WHYCOS programme in general.

Response:

WIAG participants agreed with this Recommendation.

Comments:

WIAG members agreed that the WMO should develop up this expertise (e.g. database systems, product development) and also establish linkages that would enable access to the expertise, for example, the identification of support-based partners, use of Commission for Hydrology members and the use of HOMS. The concept of centers of excellence was also proposed. WIAG members supported a lean, but responsive capability in the WMO Secretariat.

Recommendation 8

As owner of the WHYCOS programme, WMO should be playing a more significant role in mid-term and final evaluation reports that should also address the state of technical outcomes. WMO should also be undertaking a review of the post project stage approximately three years after completion of the project implementation stages. WMO should be paying more attention to understanding the causes of issues and in preventing their recurrence, particularly if they are common pitfalls.

Response:

WIAG participants agreed with this Recommendation.

Comments:

WIAG noted that this was a technical audit, not a financial audit. WIAG agreed that this needed to be a coordinated effort between WMO and the HYCOS Project. The completion report should follow an agreed and standard format prepared by WMO.

Recommendation 9

WIAG needs to hold regular meetings comprising only essential participants to be an effective coordinating body and to provide recommendations to the Secretary-General on policy and programme development so that the programme can more rapidly respond to issues and be adjusted over time. WIAG, among its other duties, should focus on defining the persistently recurring issues associated with the Project implementation stages and Post-project stage and should assist the WMO Secretariat and its WHYCOS Office in developing

strategies and approaches to resolve them. WIAG, through its coordination function, should monitor the development of issues and should assess the effectiveness of the strategies and approaches employed to overcome them.

Response:

WIAG participants agreed with this Recommendation, in principle, but noted that there were resource requirements associated with the implementation of this recommendation.

Comments:

WIAG noted that there was a resource implication associated with face-to-face meetings and that consideration could be given to holding meetings by teleconference. WIAG members agreed that during the establishment of funding arrangements, allocations should be included for attendance at WIAG meetings. WIAG agreed that it could also consider its mode of operations to include the establishment of, for example, working committees/task groups. The participants recommended annual meetings of the WIAG as a minimum. WIAG could also create an executive group to oversee WIAG activities between its meetings.

Recommendation 10

The WHYCOS Guidelines should be reviewed, revised, reissued and widely distributed. Compendiums of: lessons learned; WHYCOS and WIAG policies and procedures; WIAG recommendations; and minutes of WIAG and WCG meetings should be developed, regularly maintained and placed on the WHYCOS website for all to see.

Response:

WIAG participants agreed with this Recommendation.

Comments:

WIAG noted the proposed timetable for review of the WHYCOS Guidelines and that they would have an opportunity to review a draft of the Guidelines by the middle of 2012.

Recommendation 11

To fulfil the global concept of WHYCOS and to fully embrace the spirit of Resolution 25 (Cg-XIII), data collected through the HYCOS components must be exchanged in an unrestricted and free fashion by the participating countries in a timely fashion. If a country does not agree with the unrestricted and free exchange of data, it should not be part of the HYCOS component. WMO, through its WHYCOS Office, should be tracking the state of data exchange within the HYCOS components to ensure compliance with this recommendation and should provide its findings to WIAG.

Response:

WIAG participants agreed with this Recommendation, in principle, but noted that there will be some issues in the implementation of this recommendation.

Comments:

WIAG members agreed that within HYCOS Components data exchange among the countries for the purpose of the project was an essential requirement. WIAG members noted that there may be protocols/agreements that have been signed at the local level that need to be taken into consideration. Members considered that a set of data and or products for

exchange should be decided at the project level and that guidance for this could be addressed in the revision of the WHYCOS Guidelines. Data exchange requirements could also be included in the Memorandums of Understanding. WIAG members also agreed that the application of WMO Resolution 25 should be encouraged within the WHYCOS programme.

Recommendation 12

WMO and its WIGOS, WIS and WHYCOS programme should carefully analyse and clearly determine what specific efforts will be necessary and what costs and benefits will be incurred for HYCOS components to take advantage of the WIGOS and WIS initiatives and for the WHYCOS programme in general. Efforts should be undertaken to document these in as clear and concise a fashion as possible, as well as the costs and benefits that would likely accrue through the integration of the WHYCOS programme with WIGOS and WIS.

Response:

WIAG participants agreed with this Recommendation.

Comments:

WIAG members suggested that the relationship between WHYCOS and WIS and WIGOS should be looked at separately. WIS may be more relevant to the activities of WHYCOS. WIAG members agreed that there could be synergies between these activities as they were currently understood.

Recommendation 13

WMO and the WHYCOS programme should ensure that all documentation such as the WHYCOS Guidelines reflect the requirements to comply with the WIGOS and WIS initiatives. WMO and the WHYCOS programme should also focus on increasing awareness of the WIGOS and WIS initiatives, and more importantly on the requirements they place upon the WHYCOS programme and its HYCOS components. Efforts at increasing awareness should be made as broadly as possible through the hydrology and water resources communities that may consider undertaking a HYCOS project. WMO and the WHYCOS programme should develop a strategy to assist existing HYCOS components in taking advantage of the WIGOS and WIS initiatives.

Response:

WIAG participants agreed with this Recommendation.

Comments:

The outcomes, if appropriate, should be reflected in the WHYCOS Guidelines.

Recommendation 14

Countries and donors should adopt the "Paris Declaration on Aid Effectiveness" (OECD, 2005) when working with the WMO on implementing the WHYCOS concept through its HYCOS components. This would include, inter alia, simplifying donor policies and procedures, increasing flexibility to better reflect the amount of time to implement components, and aligning components within national priorities.

Response:

WIAG participants agreed with this Recommendation.

Comments:

WIAG members noted that there is a range of other similar projects being funded by donors that should be linked to activities related to HYCOS. WIAG members noted the difficulties in implementing this recommendation, but the topic could be addressed in the Guidelines. WIAG proposed further discussions between WMO and donors in this regard.

WHYCOS INTERNATIONAL ADVISORY GROUP
TERMS OF REFERENCE AND COMPOSITION
(with proposed changes in italics and brackets)

TERMS OF REFERENCE

The WHYCOS International Advisory Group (WIAG) shall (*):

1. Consider and advise [*the WMO*] on the concept, objectives, expected benefits/costs, and future development of WHYCOS.
2. Review and assess the status of WHYCOS, and of progress towards its objectives, and propose strategies for any necessary remedial action.
3. Review the relationship of WHYCOS with other relevant international programmes, particularly from the point of view of coordination and avoidance of overlap [*and duplication*], and propose any necessary actions.
4. Identify and evaluate constraints on, and potential risks to, the future implementation and sustainability of WHYCOS, and propose strategies to minimise those risks. Risks include, inter alia, those of a financial, technical, operational, and institutional/political nature.
5. Consider and propose plans for effective marketing [*and dissemination of achievements*] of WHYCOS[~~., and ways and means to assure its future sustainability and appropriate expansion~~].
- [6. Consider and propose ways and means of engaging with Donors in all project stages, especially for the future sustainability and appropriate expansion of WHYCOS.]
- [67.] Review and advise on the Terms of Reference and Composition of the WIAG.

(*) (taking WHYCOS to mean the overall Programme, its component parts, and the mechanisms for coordination among them)

COMPOSITION

The WHYCOS International Advisory Group shall be composed of:

1. The President of the WMO Commission for Hydrology (chairperson)
2. One representative from each operational HYCOS
3. One representative from each active [~~investor/donor~~ *technical/financial partner*]
4. One representative of the Advisory Working Group of the WMO Commission for Hydrology

The Director, Hydrology & Water Resources [~~Department~~ Branch] of WMO, shall act as secretary to the WIAG.

Other persons may be invited from time to time to participate in the work of the WIAG, as observers [~~and informants~~], including:

- Regional Hydrological Advisors
- Representatives of prospective investors/donors
- Representatives of prospective HYCOSs
- Representatives of [*prospective technical/financial partners and*] other relevant international programmes and regional groupings
- Representatives of other relevant WMO programmes.